

Notice of Allowability

Application No.

09/545,436

Examiner

Thomas Volper

Applicant(s)

PRESTAS ET AL.

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 20 July 2004.
2. ☒ The allowed claim(s) is/are 1-9 and 11-27.
3. ☒ The drawings filed on 07 April 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a communication with Rajiv Sarathy on 28 September 2004.

2. The application has been amended as follows:

Claim 1:

A method for creating virtual private connections between end points in a shared storage area network (SAN), the method comprising:

providing a virtual connection architecture for a host initiator operatively connected thereto, the virtual connection architecture having a virtual connection manager and a virtual connection cache, the virtual connection cache having a list of existing and previously established virtual connections, wherein an existing virtual connection is indicated between a specific host initiator and a specific target storage device, or a specific logical portion thereof, to provide a one-to-one relationship between a host initiator and a target storage device, or a logical portion thereof, for each virtual connection in the virtual connection cache, the host initiator generating and transmitting I/O commands to the virtual connection manager of the virtual connection architecture;

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~~comparing, by the virtual connection manager, source and destination information from the I/O commands to a predetermined list of allowable connections; and~~

~~when the source and destination information matches the predetermined list of allowable connections;~~

determining from the virtual connection cache whether a previously established virtual connection exists between the source and destination; and

when the previously established virtual connection does not exist in the virtual connection cache, then

comparing, by the virtual connection manager, source and destination information from the I/O commands to a predetermined list of allowable connections; and

when the source and destination information matches the predetermined list of allowable connections.

~~determining whether a data connection between the host initiator and a storage device indicated by the destination information is allowable; and~~

creating a data connection between the host initiator and the storage device, or a logical portion thereof, operatively connected to the virtual connection architecture, thereby establishing a virtual private SAN; but

when the virtual connection exists, using a virtual private SAN indicated by the previously established virtual connection in the virtual connection cache without again determining whether the data connection between the host initiator and the storage device indicated by the destination information is allowable.

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Claim 10:

Canceled.

Claim 24:

An apparatus for creating virtual private connections between end points in a shared storage area network comprising:

means for establishing a virtual connection between a source and a destination, wherein the means for establishing the virtual connection includes a virtual connection manager and a virtual connection cache, the virtual connection cache having a list of existing and previously established virtual connections, wherein an existing virtual connection is indicated between a specific host initiator and a specific target storage device, or a specific logical portion thereof, to provide a one-to-one relationship between a host initiator and a target storage device, or a logical portion thereof, for each virtual connection in the virtual connection cache; and

means for receiving I/O commands containing source and destination information;

means for determining whether a previously established connection exists does not include determining whether the connection is allowable;

~~means for receiving I/O commands containing source and destination information;~~

means for using a previously established connection when it exists without determining whether the previously established connection is allowable;

means for comparing the source and destination information in the I/O commands to a predetermined list of allowable data connections when a previously established connection does not exist;

means for creating a virtual private storage area network connection between the source and destination when the data connection is allowable but does not exist; and

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means for using the virtual private storage area network.

Conclusion

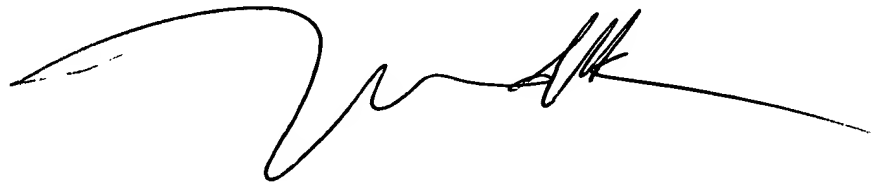
3. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Thomas E. Volper

TEV

September 28, 2004

A handwritten signature in black ink, appearing to read 'HUY D. VU', with a long horizontal line extending to the right.

**HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**